DOCUMENT RESUME

ED 222 460 SP 021 156

AUTHOR Coladarci, Theodore
TITLE Empirical Research as Inservice Teacher Education.
PUB DATE 82
NOTE 12p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, 1982). Supported by a grant from the Blackfeet Educational Training Complex (13th Cycle Teacher Corps).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS American Indians; Dropouts; *Educational Research; *Educational Theories; *Inservice Teacher Education; Interviews; Relevance (Education); Research Methodology; *Student Attitudes; Student Teacher Relationship; *Teacher Attitudes; Teacher Effectiveness; *Teacher Participation

ABSTRACT

An inservice program designed to provide high school teachers with experience in empirical research explored the factors contributing to the high dropout rate (60 percent) among a predominantly Native American student body. The practicum involved: (1) identifying the population; (2) developing instruments; (3) discussing and practicing interview techniques; (4) contacting and interviewing high school dropouts; and (5) analyzing the resulting data. Teachers interviewed 46 dropouts, and high school students were recruited for peer counseling services. Among the factors that were discovered to be important in the decision to drop out of school were teacher-student relationships, teacher attitudes, and the seeming irrelevance of schooling for Native Americans. It was also revealed that a large majority of the dropouts regretted their action. In evaluating the value of empirical research to the professional development of teachers, it can be seen that although participation can equip teachers with a valuable heuristic for viewing teaching, process activities characterizing the various phases of research (literature review, hypothesis formation, empirical test) are not unique to research and that the teaching act itself includes the same activities and phases. Teachers, using the body of knowledge they have acquired in their training, continually formulate hypotheses of actions that will improve learning in their students and empirically test their theories in the classroom. (JD)

Empirical Research as Inservice Teacher Education

Theodore Coladarci

University of Montana

Paper presented at the Annual Meeting of

the American Educational Research Association

New York City, 1982

The research reported here was supported by a grant from the Blackfeet Educational Training Complex (13th Cycle Teacher Corps). The opinions expressed do not necessarily reflect the position, policy, or endorsement of this agency.

Inservice teacher education typically addresses curriculum development and the improvement of instruction (e.g., Rubin, 1978). Indeed, these foci are critical and deserve continued--and increasingly vigorous--attention by those responsible for the conduct of inservice teacher education. I believe that participating in the planning and conducting of empirical research also can contribute to the professional development of teachers in an equally important--albeit different--manner. In this paper, I present my recent experience in such a venture, followed by what I see as the associated effects on the participating teachers.

Method

In the fall of 1980, several educators in a Montana high school district requested that an alternative to the "conventional" inservice be offered--one that would address important social problems currently confronting their schools. Specifically, these individuals wanted an inservice that would enable them to explore empirically the factors contributing to the high dropout rate (approximately 60%) among the predominantly Native American student body. In addition, implications derived from the study would be presented to the district administration and, it was hoped, would be considered in the formulation of district policy.

I agreed to direct such an inservice, to be offered for graduate credit through the University of Montana; the course was called "Practicum in Educational Research." I met with the participants on nine occasions between fall 1980 and spring 1982. This project, as is explicit in the course title, was in the form of a practicum--an "exercise," if you will, in empirical research. Availability of funds, personnel, and time did not allow the problem of school dropout to be investigated in the manner of a formal research organization. To be sure, this was never our intention. Nonetheless, district administrators were encouraged to examine our findings, cautiously and tentatively considering implications for policy.

The practicum involved (a) identifying the population, (b) developing instruments, (c) discussing and practicing interviewing techniques, (d) contacting and interviewing high-school dropouts, and (e) analyzing the resulting data.

Population

Project staff, working from school records, compiled a list of 224 students who dropped out in the previous three years. As many dropouts as possible would be contacted and, with consent, interviewed regarding their reasons for dropping out of high school.

Instrumentation

At the first meeting, project staff discussed at length various factors that were thought to contribute to school dropout. Some of these factors were intuitive or conjectural, some were based on personal experience, and others were gleaned from available literature. These factors subsequently were incorporated into a pilot questionnaire that was distributed to a sample of local teachers; a similar questionnaire was distributed to a sample of community members. The latter group included personal friends and individuals frequenting particular business establishments.

A list, subsequently compiled from completed questionnaires, represented factors that both teachers and community members tended to believe were important causes of school dropout among high-school students in the area. Additionally, frequently reported reasons volunteered by both groups (i.e. factors not explicitly presented in the questionnaire) were included in this list.

The factors in this list served as the basis for the majority of items on the questionnaire ultimately to be administered to the dropouts. These items were in the form of "reasons for dropping out," which were read to the dropout by the interviewer. (For example, "you got involved with drugs and alcohol.") The dropout's response was forced to one of four choices: (1) not important at all, (2) somewhat important, (3) important, and (4) very important.

Project staff also developed several open-ended questions, the responses to which were thought to carry greater import for district policy. Further, demographic questions were included concerning, for example, sex and residency. For all questions, particular care was exercised in keeping the language simple.

Interviewing Techniques

Considerable time was spent discussing the "social psychology" of the interview: for example, the importance of establishing rapport and appearing nonjudgmental. Also discussed was the judicious use of "wait time" and "probing."

In addition to project staff, several high-school students were recruited for interviewing. These students were enrolled in a peer-counseling class taught by one of the participants, where the topic of interviewing was formally discussed. These students practiced conducting interviews with the questionnaire, as did the project staff. These practice sessions also provided an opportunity to pilot the questionnaire, resulting in several minor changes in language that improved the clarity of the respective questions.

Contacting and Interviewing Dropouts

Project staff was rather resourceful in attempting to make the initial contact with dropouts. Personal visits to the home were made where the addresses were available. If not, known friends and relatives were asked for assistance in making the contact or information pertaining to the dropout's whereabouts.

There was considerable difficulty encountered during this phase of the project: Of 224 people on the dropout list, 46 were successfully contacted and interviewed. Approximately 35 dropouts had moved from the area and could not be reached, 12 refused to be interviewed (the refusal took several forms), and 6 were deceased. Thus, roughly 125 dropouts were not interviewed, although (presumably) in the area. There were two principal reasons for this. First, their whereabouts simply were not known by anyone queried by project staff. Second, if the whereabouts were known, repeated attempts to contact the dropouts

were unsuccessful--often because streets had no signs and houses had no street numbers or phones. After several months, contact attempts were aborted. (It is important to note that the interviewers had full-time jobs at this time.) Clearly, the dropouts ultimately interviewed did not represent a random sample of the dropout population (i.e., those on our list).

Data Analysis

The responses to the items expressed on a four-point scale were collapsed into an artificial dichotomy. If the subject's numerical response was a 1, he was assigned a 0; 2, 3, and 4 were assigned a 1. A 0 thus represented a factor (not in the statistical sense) that was "not important" in an individual's decision to drop out, while a 1 now represented a factor that was "important" (to some degree) in an individual's decision to drop out. Although the two-point scale in one sense was not as informative as the four-point scale, the results were simplified considerably; consequently, trends were seen more easily.

Responses to the open-ended questions were read carefully by project staff. For each question, categories of responses were identified. Consider, for example, the question "What could have been done to change your decision to leave school?" Eight responses referred to the relationship between the dropout and parent(s) and, therefore, was identified as one category for this question.

Once categories were listed for each question and assigned values, two staff members independently coded the responses to these questions. There was perfect coder agreement for almost all responses. Where there was nonagreement, the particular response was discussed until the nonagreement was resolved. Coded responses subsequently were keypunched and analyzed at the University of Montana computer facility.

The number of dropouts reporting a particular factor was "not important" or "important" in their decision to drop out was tallied for these items, as were the data associated with the open-ended questions. The intercorrelations among the force-choiced items were determined, as well.

Results

Only a brief summary of results will be presented here. As might be expected, factors pertaining to teacher-student relationships were reported as important in the decision to drop out. Over a third of the dropouts cited as a factor that teachers did not care about them. (Interestingly, this weighed more heavily for female dropouts.) The perception that teachers did not provide enough assistance with the student's work was also a salient factor in the dropout decision. Given the high correlation between these two factors (r = .85), one might argue it was this perceived lack of assistance that was foremost in the perception that teachers did not care. Additionally, however, the perception that teachers did not care (F19) was somewhat related (r = .57) to the sentiment that school was not important to Native American culture (F18). Thus, F19 might also reflect, to some degree, a (perceived) cultural insensitivity on the part of school officials. The importance of teacher-student relationships could also be seen in the responses to the open-ended questions. When asked what could have been done to change their decision to leave school, dropouts cited several teacher-related factors. Suggestions for teachers, aimed at reducing the incidence of dropout, centered on providing more help and showing more concern, which were echoed in providing suggestions for school administrators.

The content of schooling also was salient in the dropout decision. Approximately half of the dropouts cited as a factor that school was not important for what they wanted to do in life (F7). Roughly a quarter of the dropouts cited that school was not important to them as Native Americans (F18). However, given the low correlation between these two factors (r = .15), F7 and F18 apparently do not represent a concern common to both factors. For example, F7 could reflect the felt need for job-related skills, whereas F18 could represent the perception that the curricula did not adequately embrace Native American culture.

An interesting result was found involving F17, the factor regarding the desire for more Native American teachers. How did this relate to the sentiment

that school was not important to Native American culture (F18), or that school was not important for what one wanted to do in life (F7)? F17 and F18 correlated substantially (r = .89), while F17 and F7 were virtually unrelated (r = .04). Thus, one could argue the salience of F7 in the dropout decision did not necessarily reflect a perception that more Native American teachers were needed (F17); again, the issue possibly was the specific content of schooling, rather than who was imparting that content. In contrast, the salience of F18 in the dropout decision appeared closely related to the sentiment that more Native American teachers were needed (F17). One might infer from this that the agent involved in schooling was an important consideration in making school more important or relevant to Native American culture.

Over 90% of these dropouts reported they would advise prospective dropouts to either stay in school or, at least, reconsider their decision. Indeed, the majority of dropouts indicated a considerable change in attitude regarding their initial decision. Over half reported that, as a consequence of dropping out, only menial jobs were available and their attitude toward life had suffered. These results, alone, represent a potent "word to the wise."

Discussion

In what manner does participating in the planning and conducting of empirical research contribute to the professional development of teachers? One answer, I believe, is that such participation can equip teachers with a valuable heuristic for viewing the teaching process. (For other perspectives, see, e.g., Huling, 1982; Saphier, 1980; Ward & Tikunoff, 1980.)

It is counterproductive, as will be argued below, for educators to view the activities characterizing the various phases of research--e.g., literature review, hypothesis formulation, empirical test--as unique to research. As A. Coladarci (1959) argued some time ago, the teaching act can be conceptualized in an analogous manner. Specifically, available to teachers is a body of knowledge that guides

them in making instructional decisions. This knowledge comprises, for example, methods acquired in preservice and inservice training, existing theory regarding learning and instruction, information about specific students, and personal experience with various procedures under various conditions. In employing particular procedures in the classroom, teachers essentially are subjecting formulated hypotheses to empirical test: Desired outcomes are identified, judgments are made regarding the relevancy of various instructional procedures, procedures are employed selectively with the targeted outcomes in mind and, finally, empirically based decisions are made concerning the effectiveness of the procedures employed.

To be sure, not all teachers view teaching in this fashion. Their hypotheses, for example, might be implicit. Insofar as it is difficult to modify that which is not consciously acknowledged, however, the implicitness of one's hypotheses places a limit on the constructive consequences of the empirical test. Indeed, it is plausible to assume that when one operates under implicit hypotheses an empirical "test" phenomenologically does not occur. Rather, at best, observations are made that temporally follow one's actions--the two not being considered jointly. Thus, "confirmation" and "refutation," as such, stand little chance of being detected. Two consequences, of course, are that, unbeknownst to the teacher, (a) methods are employed that are effective, given some criterion, or (b) methods are employed that are ineffective or, worst, destructive. Although most would agree that the latter is more undesirable than the former, both result from the same problem: the absence of an explicit hypothetical framework within which employed instructional procedures are evaluated empirically.

A related--and more pervasive--problem is that where hypotheses are implicit, so is theory. ("Theory" is used here loosely, representing a tentative set of interrelated constructs and propositions concerning some phenomenon.) As with implicit hypotheses, there are limiting consequences of implicit theories. First, there is no consciously acknowledged basis for evaluating a priori the pedagogical

prescriptions encountered, for example, in preservice and inservice training. Theory, in the present context, provides a framework within which predictions can be made regarding the consequences of specific pedagogical practices. Equipped with an explicit theory--however tentative and qualified--teachers a priori can (a) conclude that a pedagogical prescription appears plausible, (b) dismiss the prescription as theoretically implausible, or (c) identify and remedy perceived shortcomings of the prescription. Without explicit theory, teachers risk accepting pedagogical prescriptions uncritically--possibly to the detriment of their students.

Consider, as illustration, the theoretical literature concerning academic engaged time. In a model representative of this literature (Harnischfeger & Wiley, 1976), the student's behavior is posited as necessarily mediating the relationship between teaching processes and subsequent student achievement. Specifically, teacher actions (e.g., physical behaviors, questioning strategies, decisions regarding seating arrangements) have their ultimate impact on student achievement to the degree that they facilitate student engagement in academically related activities. Given this model, a teacher can predict the likely consequences of specific pedagogical practices. For example, a teacher attends a local workshop, during which "learning centers" are heralded as the pedagogical device of the 1980s. Immediately, the question arises, "How might the presence of several learning centers, in simultaneous use, affect academic engagement?" The teacher might reason--guided by theory--that such engagement, in part, would be a function of the degree to which students are monitored as they work in these centers (see, e.g., Rosenshine, 1979). Because the possible relevance of a teacher-monitoring component was not addressed at the workshop, the theoretical framwork employed by this teacher might lead her to question the workshop leader's unqualified enthusiasm and confidence regarding this prescription and, consequently, reject it. Alternatively, the teacher might accept the prescription, but in an amended form to include a teacher-monitoring component--an alteration guided by theory.

A second limiting consequence of implicit theory is the difficulty in reasoning a posteriori why specific teaching practices failed to have their intended effects. In the absence of interrelated constructs and propositions, post hoc speculation is tantamont to guesswork. For example, a teacher, having examined some recent research on cooperative learning in small groups, may adopt tentatively a theory concerning this learning environment and its corresponding impact on academic achievement (see, e.g., Peterson, Janicki. & Swing, 1981; Webb, in press). If, after employing this strategy for a period of time, he discovers that learning has not progressed as he had anticipated, the teacher would have a theoretical basis for reasoning why. Specifically, were the small groups mixed or uniform in ability? Did a student's question go unanswered? If not, did a peer's response simply indicate the correct answer or, alternatively, explicate the underlying process in arriving at the correct answer? Each of these questions has a theoretical basis; without the theory, the teacher would lack direction in searching for a plausible explanation for the students' less-than-expected achievement.

It has been argued here that research and teaching are, in principle, analogous processes. Both involve surveying available information and empirical testing formulated hypotheses. Insofar as these steps are the announced modus operandi of the research enterprise, those who become involved in this enterprise are socialized accordingly. For practicing teachers, this means acquiring (if not already possessing) an explicit set of criteria for "knowing" that, it is hoped, generalizes fruitfully to the act of teaching.

References

Coladarci, A. P. The teacher as hypothesis-maker. California Journal for Instructional Improvement, 1959, 2, 3-6.

Harnischfeger, A., & Wiley, D. The teaching-learning process in elementary schools: A synoptic view. Curriculum Inquiry, 1976, 6, 5-43.

Huling, L. L. The effects on teachers of participation in an interactive research and development project. Paper presented at the annual meeting of the American Educational Research Association, New York City, 1982.

Peterson, P. L., Janicki, T. C., & Swing, S. R. Ability x treatment interaction effects on children's learning in large-group and small-group approaches. American Educational Research Journal, 1981, 18, 453-473.

Rosenshine, B. The third cycle of research on teacher effects: Content covered academic engaged time, and direct instruction. In P. L. Peterson and H. J. Walberg (Eds.), Research on teaching. Berkeley, CA: McCutchan, 1979, pp. 28-56.

Rubin, L. (Ed). The in-service education of teachers, Boston: Allyn & Bacon, 1978.

Saphier, J. D. Working with the teacher-as-researcher: A vehicle for conduct of basic research and staff development. Paper presented at the annual meeting of the American Educational Research Association, Boston, 1980.

Ward, B., & Tikunoff, W. The IR&DT Experience. Paper presented at the annual meeting of the American Educational Research Association, Boston, 1980.

Webb, N. M. Peer interaction and learning in cooperative small groups. Journal of Educational Psychology, in press.